

Exploring ChatGPT Usage Intention Among First-Year Visual Communication Design Students

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ABSTRACT

The growing adoption of Generative Artificial Intelligence (Generative AI) has increased the relevance of tools such as ChatGPT within design education. Despite its growing use among students, limited research has examined the factors influencing students' intention to use ChatGPT in design-related activities. This study aims to explore the relationships among Intrinsic Motivation, Performance Expectancy, and Behavioral Intention to Use ChatGPT among first-year Visual Communication Design students.

A quantitative research approach was employed using a cross-sectional survey administered to first-year Visual Communication Design students at Universitas Pelita Harapan. Following data screening procedures, 27 valid responses were retained for

analysis. Data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM).

The results indicate that Intrinsic Motivation has a significant positive effect on Performance Expectancy. However, neither Performance Expectancy nor Intrinsic Motivation significantly influences Behavioral Intention to Use ChatGPT. Furthermore, Performance Expectancy does not mediate the relationship between Intrinsic Motivation and Behavioral Intention to Use. These findings suggest that while students generally perceive ChatGPT as useful and demonstrate positive motivation toward its use, such perceptions have not yet translated into a strong intention to continuously integrate the technology into future design-related activities.

This study contributes to the emerging literature on Generative AI adoption in design education by providing preliminary evidence from first-year design students. The findings indicate that ChatGPT adoption among novice design students remains largely exploratory, reflecting experimentation and curiosity rather than long-term commitment to technology use.

Keywords: ChatGPT, Generative Artificial Intelligence, Design Education, Visual Communication Design Students, Technology Adoption

INTRODUCTION

The rapid advancement of Generative Artificial Intelligence (Generative AI) has transformed the way creative work is conceived, developed, and evaluated across various design disciplines (Abdipour, 2026). Generative AI refers to artificial intelligence systems capable of producing original content, including text, images, audio, and other forms of digital media based on user inputs and learned patterns from large datasets (Popescu & Schut, 2023). In the context of Visual Communication Design, Generative AI tools such as ChatGPT, Midjourney, and DALL-E are increasingly being integrated into design workflows to support activities ranging from idea generation and concept development to research, prototyping, and content creation (Abdipour, 2026; Popescu & Schut, 2023). Consequently, these technologies are becoming increasingly relevant not only in professional design practice but also in design education, where students are beginning to incorporate AI-assisted tools into their creative and learning processes.

Recent studies have increasingly explored the integration of artificial intelligence within design education and design practice. Existing research has examined the impact of AI on creativity and design production processes (Alam & Haikal, 2024), the implementation of AI to support students' design skills and design-related activities (Qusyairi et al., 2025), as well as the use of AI-assisted tools in design education through training and instructional initiatives (Jimmy et al., 2025; Nurcahyani et al., 2026). In addition, scholars have begun to discuss the ethical implications associated with the growing adoption of AI in contemporary design practice (Karrol et al., 2026).

Collectively, these studies provide valuable insights into the opportunities, applications, and challenges of AI within design contexts. However, relatively limited attention has been devoted to understanding the psychological factors that influence students' acceptance and intention to use AI technologies in design-related activities.

Understanding these factors is important because the successful integration of Generative AI in design education depends not only on the availability of technological tools but also on students' willingness to adopt and continuously use them (Venkatesh et al., 2003). Despite the growing presence of Generative AI in design education and design practice (Abdipour, 2026; Popescu & Schut, 2023), empirical evidence explaining why students intend to use such technologies remains limited, particularly within the context of design education.

Against this background, ChatGPT has emerged as one of the most widely used Generative AI tools among students due to its ability to support various academic and creative tasks, including idea generation, information retrieval, and content development. For Visual Communication Design students, ChatGPT may serve as a valuable tool to support design-related activities such as brainstorming, concept development, and research. However, despite its growing use, limited empirical evidence exists regarding the factors that influence students' intention to use ChatGPT within design education. This issue is particularly relevant for first-year students, who are in the early stages of developing their design processes and technological competencies. Therefore, this study aims to examine the relationships among Intrinsic Motivation, Performance Expectancy, and Behavioral Intention to Use ChatGPT among first-year Visual Communication Design students.

LITERATURE REVIEW

The present study draws upon two theoretical perspectives to explain students' intention to use ChatGPT in design-related activities. First, Self-Determination Theory (SDT) suggests that individuals are more likely to engage in activities when they experience enjoyment, interest, and personal satisfaction from the activity itself (Ryan & Deci, 2000). Second, the Unified Theory of Acceptance and Use of Technology (UTAUT) proposes that individuals' perceptions regarding the usefulness of a technology play a central role in shaping technology adoption and usage intentions (Venkatesh et al., 2003). These perspectives provide a useful foundation for understanding why design students may be willing to adopt and continue using Generative AI tools such as ChatGPT.

According to SDT, intrinsically motivated individuals tend to engage more actively with a particular activity because they perceive it as interesting and personally rewarding. When students enjoy using ChatGPT and perceive positive experiences from interacting with the technology, they are more likely to recognize its potential benefits for supporting their learning and design-related tasks. Previous studies suggest that intrinsic motivation contributes to more favorable evaluations of technology usefulness and expected performance outcomes (Ryan & Deci, 2000; Yang, 2024).

H1: Intrinsic Motivation positively influences Performance Expectancy

Performance expectancy refers to the extent to which individuals believe that using a technology will improve their task performance and help them achieve desired outcomes (Venkatesh et al., 2003). In educational settings, students who perceive ChatGPT as useful for generating ideas, obtaining information, and supporting academic tasks are expected to demonstrate stronger intentions to continue using the technology. Consistent with the UTAUT framework, previous studies have repeatedly identified performance expectancy as one of the strongest predictors of behavioral intention to use emerging technologies, including AI-based applications (Venkatesh et al., 2003; Yang, 2024). Therefore, the following hypothesis is proposed:

H2: Performance Expectancy positively influences Behavioral Intention to Use

Beyond its indirect influence through performance expectancy, intrinsic motivation may also directly affect students' intention to use ChatGPT. Students who find ChatGPT enjoyable, engaging, and personally beneficial may develop favorable attitudes toward the technology and become more willing to integrate it into future learning and design activities. Previous studies have demonstrated that intrinsic motivation contributes directly to technology adoption and continuance intentions in various educational and digital contexts (Ryan & Deci, 2000; Venkatesh et al., 2003). Therefore, the following hypothesis is proposed:

H3: Intrinsic Motivation positively influences Behavioral Intention to Use

Furthermore, the relationship between intrinsic motivation and behavioral intention may be explained through performance expectancy. Students who enjoy using ChatGPT are likely to perceive greater performance benefits from the technology, which in turn strengthens their intention to continue using it. In this sense, performance expectancy serves as a mechanism through which intrinsic motivation influences behavioral intention. Similar findings have been reported in previous AI acceptance studies, where performance-related perceptions acted as important explanatory variables linking motivational factors and usage intentions (Yang, 2024). Therefore, the following hypothesis is proposed:

H4: Performance Expectancy mediates the relationship between Intrinsic Motivation and Behavioral Intention to Use

Based on the theoretical arguments and hypotheses developed in this study, the proposed research model is presented in Figure 1.

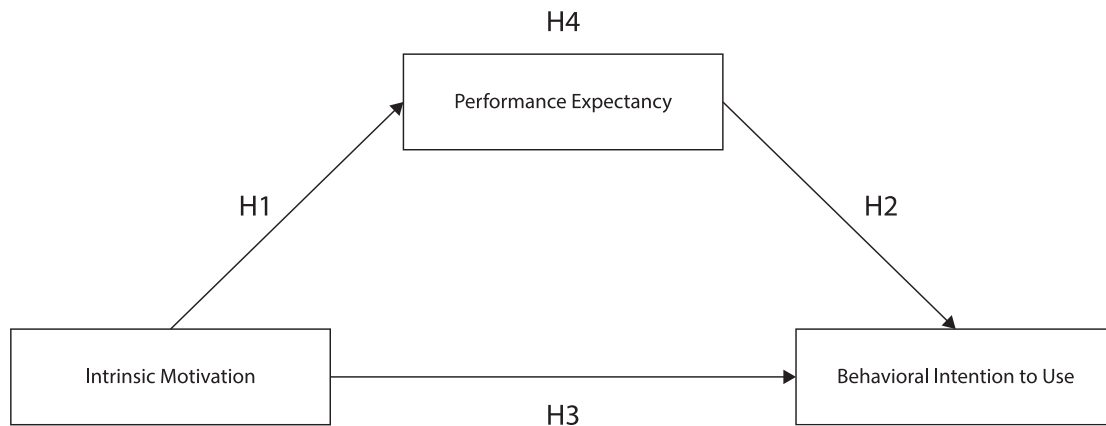


Figure 1. Conceptual Framework

METHODOLOGY

This study employed a quantitative research approach to examine the relationships among intrinsic motivation, performance expectancy, and behavioral intention to use ChatGPT among first-year Visual Communication Design students. A cross-sectional survey design was adopted to collect data at a single point in time, allowing the investigation of students' perceptions and intentions regarding the use of generative artificial intelligence in design-related activities.

The target population consisted of first-year students enrolled in the Visual Communication Design program at Universitas Pelita Harapan. Since the study aimed to obtain an initial understanding of students' acceptance of ChatGPT within a specific educational context, a census approach was applied by inviting all students in the class to participate in the survey. A total of 31 responses were initially collected. During the data screening process, four responses were identified as straight-lining cases, where respondents selected the same response option across all questionnaire items. These responses were excluded from further analysis to improve data quality. Consequently, 27 valid responses were retained for the final analysis.

Given the relatively small sample size, additional justification for the use of PLS-SEM is warranted. According to the commonly applied 10-times rule, the minimum sample size should be at least ten times the maximum number of structural paths directed at a latent construct (Hair et al., 2011, 2022; Kock & Hadaya, 2018). In the proposed model, the maximum number of paths pointing to a single endogenous construct was two (i.e., Behavioral Intention to Use), resulting in a minimum sample size requirement of 20 observations. Therefore, the final sample of 27 respondents exceeded this minimum requirement. Furthermore, the present study is exploratory in nature and focuses on a specific cohort of first-year Visual Communication Design students, making PLS-SEM an appropriate analytical approach for this preliminary investigation.

Data were collected through an online questionnaire administered using Microsoft Forms. Participation was voluntary, and respondents were informed that the collected data would be used solely for research purposes. Confidentiality and anonymity were ensured throughout the study, and no personally identifiable information was collected. The questionnaire consisted of two sections. The first section gathered demographic information, including gender, length of ChatGPT usage, and frequency of ChatGPT

usage. The second section measured the research constructs using a series of structured statements.

The measurement instrument was adapted from previous studies on artificial intelligence acceptance, technology adoption, and intrinsic motivation (Yang, 2024). The constructs included Intrinsic Motivation (IM), Performance Expectancy (PE), and Behavioral Intention (BI). The instrument items were adapted and modified to fit the context of ChatGPT use among design students. Intrinsic Motivation refers to students' internal drive to use ChatGPT due to interest, enjoyment, and personal satisfaction gained from its use. Performance Expectancy reflects students' beliefs that ChatGPT can improve the effectiveness and quality of their design-related activities. Behavioral Intention represents students' intention to continue using ChatGPT in future design activities. Each construct was measured using four reflective indicators. Responses were recorded using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

Data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) with SmartPLS 4. PLS-SEM was selected because it is suitable for exploratory studies, prediction-oriented research, and models with relatively small sample sizes (Hair et al., 2011, 2017, 2019, 2022). Following the guidelines proposed by Hair et al. (2022), the analysis was conducted in two stages. First, the measurement model was evaluated by examining indicator reliability through outer loadings, internal consistency reliability using Cronbach's alpha and composite reliability, convergent validity through the average variance extracted (AVE), and discriminant validity using the heterotrait–monotrait ratio (HTMT). Second, the structural model was assessed by examining collinearity among constructs, path coefficients, and their significance levels. The significance of the hypothesized relationships was evaluated using a bootstrapping procedure with 1,000 resamples. Path coefficients, t-values, and p-values were used to determine whether the proposed hypotheses were supported.

RESULTS & DISCUSSIONS

Respondents Profile

A total of 31 responses were initially collected from first-year Visual Communication Design students at Universitas Pelita Harapan. Following the data screening process, four responses were excluded due to straight-lining behavior, resulting in 27 valid responses for further analysis. Table 1 presents the demographic characteristics and ChatGPT usage profiles of the respondents, including gender, length of ChatGPT usage, and frequency of ChatGPT usage.

Table 1. Respondents profile

Description	Category	Frequency	Percentage (%)
Gender	Female	20	74.1
	Male	7	25.9
Length of ChatGPT Usage	Less than 1 month	2	7.4
	1–3 months	3	11.1
	4–6 months	5	18.5
	7–12 months	3	11.1
	More than 12 months	14	51.9

Frequency of ChatGPT Usage	Less than once per month	7	25.9
	1–3 times per month	7	25.9
	1–2 times per week	9	33.3
	3–5 times per week	4	14.8

As shown in Table 1, the majority of respondents were female students (74.1%), while male students accounted for 25.9% of the sample. Regarding their experience with ChatGPT, more than half of the respondents (51.9%) had used the technology for more than 12 months, indicating that most participants were already familiar with ChatGPT prior to the study. The remaining respondents reported shorter periods of usage, ranging from less than one month (7.4%) to twelve months (11.1–18.5%).

In terms of usage frequency, the largest proportion of respondents reported using ChatGPT 1–2 times per week (33.3%). Meanwhile, 25.9% used ChatGPT less than once per month, and another 25.9% used it 1–3 times per month. Only 14.8% reported using ChatGPT more frequently, namely 3–5 times per week. These findings suggest that while most respondents had considerable experience with ChatGPT, their frequency of use varied, reflecting different levels of integration of the technology into their design-related activities.

Measurement Model

The measurement model was evaluated by examining indicator reliability, internal consistency reliability, and convergent validity. As shown in Table 2, all indicators exhibited outer loading values above the recommended threshold of 0.70 (Hair et al., 2022), ranging from 0.747 to 0.957. This indicates that all indicators adequately represented their respective constructs and were retained for further analysis.

Table 2. Indicator reliability, internal consistency reliability, and convergent validity

Construct	Indicator		Outer Loadings
Intrinsic Motivation	IM1	I enjoy using ChatGPT in design-related activities.	0.747
	IM2	I am interested in using ChatGPT to help solve design-related problems.	0.907
	IM3	Using ChatGPT in the design process motivates me to learn new things.	0.878
	IM4	I believe that using ChatGPT is beneficial for my development as a design student.	0.852
	CA= 0.869; CR= 0.911; AVE= 0.719		
Performance Expectancy	PE1	ChatGPT helps me complete design-related activities more efficiently.	0.876
	PE2	ChatGPT helps me achieve the objectives of my design assignments or projects.	0.899
	PE3	ChatGPT helps me gain knowledge and insights that support the design process.	0.903
	PE4	ChatGPT is a useful tool for my design-related activities.	0.879
	CA= 0.912; CR= 0.938; AVE= 0.791		

Behavioral Intention to Use	BI1	I plan to use ChatGPT in design-related activities in the future.	0.957
	BI2	I intend to use ChatGPT to support my future design projects.	0.930
	BI3	I would recommend the use of ChatGPT to other design students.	0.925
	BI4	I intend to use ChatGPT more frequently to support my design activities.	0.868
	CA= 0.940; CR= 0.957; AVE= 0.847		

Regarding internal consistency reliability, all constructs demonstrated satisfactory reliability, with Cronbach's alpha values ranging from 0.869 to 0.940 and composite reliability values ranging from 0.911 to 0.957. These values exceed the recommended minimum threshold of 0.70, indicating strong internal consistency among the measurement items. Furthermore, convergent validity was established as the average variance extracted (AVE) values for Intrinsic Motivation (0.719), Performance Expectancy (0.791), and Behavioral Intention to Use (0.847) all exceeded the recommended threshold of 0.50. Overall, the results suggest that the measurement model possesses adequate reliability and convergent validity. Discriminant validity was subsequently assessed using the heterotrait–monotrait ratio (HTMT), and the results are presented in Table 3.

Table 3. Discriminant Validity

	Behavioral Intention to Use	Intrinsic Motivation	Performance Expectancy
Behavioral Intention to Use			
Intrinsic Motivation	0.873		
Performance Expectancy	0.857	0.983	

Discriminant validity was assessed using the heterotrait–monotrait ratio (HTMT), as recommended by Hair et al. (2022). As presented in Table 3, the HTMT values between Behavioral Intention to Use and Intrinsic Motivation (0.873), as well as between Behavioral Intention to Use and Performance Expectancy (0.857), were below the recommended threshold of 0.90, indicating acceptable discriminant validity between these constructs. However, the HTMT value between Intrinsic Motivation and Performance Expectancy was relatively high (0.983), exceeding the recommended threshold. This finding suggests a substantial conceptual overlap between the two constructs in the context of ChatGPT use among first-year design students. Nevertheless, both constructs were retained in the model because they represent theoretically distinct concepts and were measured using separate indicators adapted from prior studies.

Structural Model

Following the assessment of the measurement model, the structural model was evaluated by examining collinearity, explanatory power, effect sizes, and the significance of the hypothesized relationships. The variance inflation factor (VIF) values ranged from 1.000 to 4.848, remaining below the recommended threshold of 5 (Hair et al., 2022). These results indicate that multicollinearity was not a critical concern in the structural model.

The model demonstrated substantial explanatory power. Intrinsic Motivation explained 79.4% of the variance in Performance Expectancy ($R^2 = 0.794$), while Intrinsic Motivation and Performance Expectancy jointly explained 67.3% of the variance in Behavioral Intention to Use ($R^2 = 0.673$). Furthermore, the effect size analysis revealed that Intrinsic Motivation exerted a large effect on Performance Expectancy ($f^2 = 3.848$). In contrast, the effects of Intrinsic Motivation ($f^2 = 0.102$) and Performance Expectancy ($f^2 = 0.123$) on Behavioral Intention to Use were small.

To evaluate the proposed hypotheses, a bootstrapping procedure with 1,000 resamples was conducted. The significance of the hypothesized relationships was assessed based on the path coefficients (β), t-values, and p-values. The results of the hypothesis testing are presented in Table 4.

Table 4. Direct effect hypotheses testing

Hypotheses	Path	Std. path coefficient	T-statistics	p-values	Results
H1	IM $\rightarrow$ PE	0.891	16.264	0.000	Supported
H2	PE $\rightarrow$ BI	0.441	1.732	0.084	Not Supported
H3	IM $\rightarrow$ BI	0.402	1.599	0.110	Not Supported

As shown in Table 4, Intrinsic Motivation had a positive and significant effect on Performance Expectancy ($\beta = 0.891$, $t = 16.264$, $p < 0.001$). Therefore, H1 was supported. This result indicates that students who experience higher levels of intrinsic motivation toward using ChatGPT tend to perceive the technology as more useful in supporting their design-related activities. However, Performance Expectancy did not have a significant effect on Behavioral Intention to Use ($\beta = 0.441$, $t = 1.732$, $p = 0.084$). Similarly, Intrinsic Motivation did not have a significant direct effect on Behavioral Intention to Use ($\beta = 0.402$, $t = 1.599$, $p = 0.110$). Consequently, H2 and H3 were not supported.

In addition to the direct effects, the mediating role of Performance Expectancy in the relationship between Intrinsic Motivation and Behavioral Intention to Use was also examined. Following the recommendations of Zhao et al. (2010), mediation was assessed by evaluating the significance of the indirect effect obtained through the bootstrapping procedure. The results of the mediation analysis are presented in Table 5.

Table 5. Mediation hypotheses testing

Hypotheses		Indirect Effect		Direct Effect		Results
No.	Path	Std. path coefficient	p-values	Std. path coefficient	p-values	
H4	IM $\rightarrow$ PE $\rightarrow$ BI	0.393	0.094	0.402	0.110	Not Supported

As shown in Table 5, the indirect effect of Intrinsic Motivation on Behavioral Intention to Use through Performance Expectancy was not statistically significant ($\beta = 0.393$, $p = 0.094$). Similarly, the direct effect of Intrinsic Motivation on Behavioral Intention to Use was also not significant ($\beta = 0.402$, $p = 0.110$). Therefore, H4 was not supported. Based on the mediation framework proposed by Zhao et al. (2010), this result is classified as no-effect nonmediation, as neither the indirect effect nor the direct effect was statistically significant. These findings indicate that Performance Expectancy does not mediate the relationship between Intrinsic Motivation and Behavioral Intention to Use among first-year Visual Communication Design students.

Discussion

The findings provide insights into the factors influencing first-year Visual Communication Design students' intention to use ChatGPT in design-related activities. Overall, the results indicate that Intrinsic Motivation plays an important role in shaping students' perceptions of ChatGPT's usefulness. However, neither Intrinsic Motivation nor Performance Expectancy was found to significantly influence Behavioral Intention to Use. Furthermore, Performance Expectancy did not mediate the relationship between Intrinsic Motivation and Behavioral Intention to Use.

The results show that Intrinsic Motivation significantly and positively influences Performance Expectancy ($\beta = 0.891$, $p < 0.001$), supporting H1. This finding suggests that students who enjoy using ChatGPT and perceive the experience as personally rewarding are more likely to recognize its usefulness in supporting design-related activities. Consistent with Self-Determination Theory (Ryan & Deci, 2000), intrinsic enjoyment and interest encourage deeper engagement with an activity, leading to more favorable evaluations of its outcomes. The substantial explanatory power of the model ($R^2 = 0.794$) and the large effect size ($f^2 = 3.848$) further highlight the central role of Intrinsic Motivation in shaping students' perceptions of ChatGPT's usefulness. In the context of design education, students who are intrinsically motivated to use ChatGPT may become more aware of its benefits for brainstorming, concept development, information gathering, and other design-related tasks.

Contrary to expectations, Performance Expectancy did not significantly influence Behavioral Intention to Use ($\beta = 0.441$, $p = 0.084$), resulting in the rejection of H2. Although students generally perceived ChatGPT as useful, such perceptions were insufficient to establish a stronger intention to continue using the technology. One possible explanation is that first-year design students are still exploring different learning approaches and digital tools, causing ChatGPT to be viewed as a

supplementary rather than essential component of their design workflow. This interpretation is consistent with findings from the *Indonesia Millennial and Gen Z Report 2025*, which indicate that AI adoption among Indonesian Gen Z users remains at a relatively early stage despite increasing familiarity with AI technologies (Pasaman et al., 2025). The small effect size observed for this relationship ($f^2 = 0.123$) further suggests that Performance Expectancy contributes only modestly to students' intention to use ChatGPT. Another explanation may be related to the nature of Visual Communication Design itself. Unlike image-generating AI tools such as Midjourney, DALL-E, or Adobe Firefly, ChatGPT primarily operates through text-based interactions. While students may perceive ChatGPT as useful for brainstorming, concept development, research, and idea exploration, its contribution to the creation of visual artifacts remains indirect. Consequently, students may recognize the usefulness of ChatGPT without necessarily perceiving it as an essential component of their visual design workflow. This distinction may help explain why perceived usefulness did not translate into a stronger intention to continue using the technology.

Similarly, H3 was not supported, as Intrinsic Motivation did not significantly influence Behavioral Intention to Use ($\beta = 0.402$, $p = 0.110$). While students may enjoy using ChatGPT and perceive the experience positively, such enjoyment does not necessarily translate into a commitment to continue using the technology. From the perspective of Self-Determination Theory, intrinsic motivation may encourage initial engagement and exploration (Ryan & Deci, 2000); however, sustained behavioral intention may depend on additional considerations beyond personal interest alone. For first-year students, ChatGPT may still represent a novel technology that supports experimentation rather than a tool that has become fully integrated into their design practices. This interpretation is also reflected in the small effect size associated with this relationship ($f^2 = 0.102$). This finding may also reflect the characteristics of early-stage design education. First-year Visual Communication Design students are typically encouraged to experiment with different creative approaches, media, and design tools while developing their own design processes. In this context, ChatGPT may be perceived as one of many available resources for creative exploration rather than a tool that should become a permanent component of future design practice. As a result, students may enjoy using ChatGPT and find it intellectually stimulating without necessarily developing a strong intention to continue relying on it in the long term.

The mediation analysis revealed that Performance Expectancy did not mediate the relationship between Intrinsic Motivation and Behavioral Intention to Use ($\beta = 0.393$, $p = 0.094$). Therefore, H4 was not supported. Following the mediation typology proposed by Zhao et al. (2010), this result can be classified as no-effect nonmediation because neither the indirect effect nor the direct effect was statistically significant. Although Intrinsic Motivation substantially enhanced students' perceptions of ChatGPT's usefulness, these perceptions did not subsequently translate into stronger intentions to continue using the technology. This finding is consistent with the non-significant relationship between Performance Expectancy and Behavioral Intention to Use identified in the structural model.

Overall, the findings suggest that first-year Visual Communication Design students generally recognize and appreciate the usefulness of ChatGPT, particularly when they are intrinsically motivated to engage with the technology. However, neither Intrinsic Motivation nor Performance Expectancy was sufficient to explain students' intention to continue using ChatGPT. Despite the model explaining a substantial proportion of variance in Behavioral Intention to Use ($R^2 = 0.673$), the non-significant structural relationships indicate that additional factors may influence AI adoption among novice design students. These findings suggest that the use of ChatGPT among first-year design students remains largely exploratory in nature, reflecting experimentation and curiosity rather than a stable commitment to integrating the technology into future design workflows. Furthermore, the findings indicate that students may currently perceive ChatGPT primarily as a supporting tool for ideation, research, and concept development rather than as a core tool for visual production within the design process.

CONCLUSIONS

This study examined the relationships among Intrinsic Motivation, Performance Expectancy, and Behavioral Intention to Use ChatGPT among first-year Visual Communication Design students. The findings revealed that Intrinsic Motivation significantly and positively influenced Performance Expectancy, indicating that students who enjoy and are interested in using ChatGPT are more likely to perceive the technology as useful for supporting design-related activities. However, neither Performance Expectancy nor Intrinsic Motivation significantly influenced Behavioral Intention to Use. Furthermore, Performance Expectancy did not mediate the relationship between Intrinsic Motivation and Behavioral Intention to Use. These findings suggest that although first-year design students generally recognize the usefulness of ChatGPT, such perceptions have not yet developed into a strong intention to continuously integrate the technology into their future design workflows. The findings further indicate that ChatGPT is currently perceived more as a supporting tool for ideation, concept development, and learning rather than as a core tool for visual production within the design process.

This study contributes to the growing literature on Generative AI adoption in design education by providing an initial and exploratory examination of the factors associated with ChatGPT usage among first-year design students. Given the relatively small sample size and the focus on a single cohort of students, the findings should be interpreted as preliminary evidence rather than definitive conclusions regarding Generative AI adoption in design education. From a practical perspective, the findings may assist Visual Communication Design educators in understanding how students perceive and utilize Generative AI tools within their learning process. Rather than positioning ChatGPT solely as a technology for productivity enhancement, design educators may consider integrating it as a tool for research, ideation, concept exploration, and reflective learning activities. The findings also highlight the importance of helping students critically evaluate the role and limitations of text-based AI tools within a discipline that remains fundamentally visual in nature.

Nevertheless, several limitations should be acknowledged. First, the study involved a relatively small sample drawn from a single cohort within one institution, limiting the generalizability and statistical robustness of the findings. While the study was intended as an exploratory investigation of ChatGPT adoption among first-year Visual Communication Design students, future studies should seek to validate and extend these findings using larger and more diverse samples. Future studies are encouraged to employ larger and more diverse samples across different educational institutions and student populations. Second, the present study focused exclusively on ChatGPT as a representative Generative AI tool. Future research may extend this investigation to other Generative AI applications, such as Midjourney, DALL-E, Adobe Firefly, or other emerging AI-assisted design tools. Finally, replication studies involving different educational contexts, academic disciplines, and levels of study may provide a more comprehensive understanding of the factors influencing Generative AI adoption among students.

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AUTHOR CONTRIBUTIONS

Brian Alvin Hananto: Conceptualization, methodology, investigation, formal analysis, data curation, writing—original draft preparation, writing—review and editing, visualization, and supervision.

Tiara Kiatama: Data collection

All authors have read and agreed to the published version of the manuscript.

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CONFLICT OF INTEREST

The authors declare that there is no conflict of interest regarding the publication of this paper. The research was conducted independently without any commercial or financial relationships that could be construed as a potential conflict of interest.

ETHICAL APPROVAL

This study was conducted in accordance with established ethical standards for academic research. The study did not involve experimental manipulation, sensitive personal data, or clinical procedures beyond minimal-risk academic research.

GENERATIVE AI DISCLOSURE

Generative AI tools, including ChatGPT, were used during the preparation of this manuscript to assist with language refinement, editing, and the development of draft text. The authors reviewed, revised, and verified all AI-assisted outputs. All decisions related to the conceptualization of the study, theoretical framing, research design, data collection, data analysis, interpretation of findings, and conclusions were made solely by the authors. The authors take full responsibility for the accuracy, integrity, and originality of the content presented in this manuscript.

REFERENCES

- Abdipour, M. (2026). Designing with Generative AI: Symbiosis, Authorship, and the Evolving Image. *She Ji: The Journal of Design, Economics, and Innovation*, 12(1), 85–106. <https://doi.org/https://doi.org/10.1016/j.sheji.2026.02.004>
- Alam, T. Z., & Haikal, J. (2024). Dampak Produksi Desain Grafis Pada Penggunaan Teknologi Artificial Intelligence (AI) Dengan Menggunakan Grounded Theory. *Jurnal Seni Nasional Cikini*, 10(1), 15–26. <https://doi.org/10.52969/jsnc.v10i1.265>
- Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2022). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)* (Third). SAGE Publishing.
- Hair, J. F., Matthews, L. M., Matthews, R. L., & Sarstedt, M. (2017). PLS-SEM or CB-SEM: updated guidelines on which method to use. *International Journal of Multivariate Data Analysis*, 1(2), 107–123. <https://doi.org/10.1504/IJMDA.2017.087624>
- Hair, J. F., Ringle, C. M., & Sarstedt, M. (2011). PLS-SEM: Indeed a Silver Bullet. *Journal of Marketing Theory and Practice*, 19(2), 139–152. <https://doi.org/10.2753/MTP1069-6679190202>
- Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review*, 31(1), 2–24. <https://doi.org/10.1108/EBR-11-2018-0203>

- Jimmy, Sugianto, Simanihuruk, T., Johan, & Putra, J. (2025). Pelatihan Desain Grafis dengan Canva AI untuk Siswa SMA Bodhicita. *LEBAH*, 19(2), 166–172. <https://doi.org/10.35335/lebah.v19i2.451>
- Karrol, Y. P., Keytimu, J. M. Y. D. A., Bria, B. J., & Marchelino, C. J. (2026). Kesenjangan Etika dalam Implementasi AI pada Praktik Desain Grafis Kontemporer. *Visualoka: Jurnal Kajian Visual, Desain, Komunikasi, Dan Budaya*, 1(1). <https://jurnal.nusanipa.ac.id/index.php/visualoka/article/view/1150>
- Kock, N., & Hadaya, P. (2018). Minimum sample size estimation in PLS-SEM: The inverse square root and gamma-exponential methods. *Information Systems Journal*, 28(1), 227–261.
- Nurcahyani, E., Adam, N. D. N., Suwarno, A. N., Faqih, M., & Setiawan, I. (2026). Transformasi Desain Grafis Di Era AI : Pendampingan/Pelatihan Penggunaan Canva Untuk Desain Kreatif. *Jurnal Akademik Pengabdian Masyarakat*, 4(3), 321–330. <https://doi.org/10.61722/japm.v4i3.9917>
- Pasaman, K. A., Hutauruk, Y. G., Hotnauli, F. G., Maharani, D., & Davisca, M. A. (2025). *Indonesia Millennial and Gen Z Report 2025*.
- Popescu, A.-R., & Schut, A. (2023). Generative AI in creative design processes: a dive into possible cognitive biases. *IASDR 2023: Life-Changing Design*, 9–13. <https://doi.org/10.21606/iasdr.2023.784>
- Qusyairi, M., Almantara, I. P. S., Putra, Y. D., & Prayudha, P. A. (2025). Pendampingan dan Penerapan AI dalam Proses Desain Grafis untuk Meningkatkan Keterampilan Siswa. *Jurnal Teknologi Informasi Untuk Masyarakat (Teknokrat)*, 3(2), 309–318. <https://doi.org/10.29408/jt.v3i2.33183>
- Ryan, R. M., & Deci, E. L. (2000). Self-Determination Theory and the Facilitation of Intrinsic Motivation, Social Development, and Well-Being. *American Psychologist*, 55(1), 68–78.
- Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User Acceptance of Information Technology: Toward A Unified View. *Management Information Systems Quarterly*, 27(3), 425–478. <https://doi.org/10.2307/30036540>
- Yang, H.-H. (2024). The Acceptance of AI Tools Among Design Professionals: Exploring the Moderating Role of Job Replacement. *International Review of Research in Open and Distributed Learning*, 25(3), 326–349. <https://doi.org/10.19173/irrodl.v25i3.7811>